

IN THE CLAIMS

1-12. (Canceled)

13. (New) An error correction method for a storage device comprising the steps of:

    performing a first error detection and correction which does not need to read a data a plurality of times during reproduction of the data in order to detect or correct an error in the data;

    if the first error detection and correction cannot detect or correct an error in the data, then

        reading a sector a plurality of times during reproduction of data recorded on a recording medium;

        storing a plurality of data which is obtained by said reading;

        comparing data values of bytes located in the same location among said stored plurality of data;

        judging whether an error has occurred in said data in ascertained positions where said values differ; and

        correcting errors on the basis of these ascertained positions.

14. (New) The error correction method for a storage device according to claim 13, wherein errors are corrected using erasure correction on the basis of said ascertained positions.

15. (New) The error correction method for a storage device according to claim 13, further comprising the steps of:  
reading said sector three or more times;  
comparing the values of the data positioned in said same location each time;  
judging whether an error has occurred in the data in ascertained positions where these values differ each time; and  
correcting errors on the basis of said ascertained positions.

16. (New) The error correction method for a storage device according to claim 15, wherein errors are corrected using erasure correction on the basis of said ascertained positions.

17. (New) The error correction method for a storage device according to claim 13, further comprising the steps of:  
reading said sector three or more times;

comparing the values of the data positioned in said same location each time;

judging whether an error has occurred in the data in ascertained positions where these values differ even one time; and

correcting errors on the basis of said ascertained positions.

18. (New) The error correction method for a storage device according to claim 17, wherein errors are corrected using erasure correction on the basis of said ascertained positions.

19. (New) An error correction method for a storage device comprising the steps of:

performing a first error detection and correction which does not need to read a data a plurality of times during reproduction of the data in order to detect or correct an error in the data;

if the first error detection and correction cannot detect or correct an error in the data, then

reading a sector a plurality of times during reproduction of data;

storing a plurality of digital data produced by conversion from the signal thus obtained;

comparing values of data located at the same location for each byte from the leading end of this stored plurality of digital data; and

judging whether an error has occurred in the data located in byte positions where the values differ, and storing the resulting error information.

20. (New) The error correction method for a storage device according to claim 19, wherein errors are corrected using erasure correction on the basis of said positions.

21. (New) An error correction method for a storage device comprising the steps of:

performing a first error detection and correction which does not need to read a data a plurality of times during reproduction of the data in order to detect or correct an error in the data;

if the first error detection and correction cannot detect or correct an error in the data, then

reading data recorded on a recording medium;  
amplifying this read signal;

reproducing digital data from said amplified signal;  
storing a plurality of digital data read a plurality of times;  
ascertaining error positions by comparing the values of said plurality of digital data in the same byte positions;  
storing one or more of said reproduced digital data;  
producing an erasure-locator polynomial from said erasure pointer;  
producing a modified error-locator polynomial and an error-magnitude polynomial from said erasure-locator polynomial and said syndrome; and  
calculating errors from said modified error locator polynomial and said error-magnitude polynomial.

22. (New) The error correction method for a storage device according to claim 21, wherein errors are corrected using erasure correction on the basis of said ascertained positions.